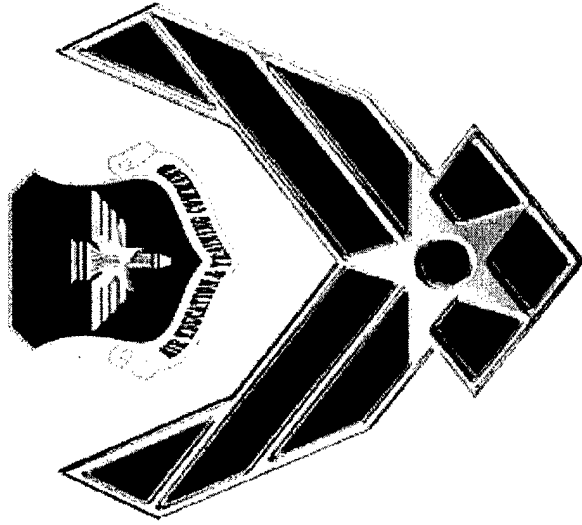


Air Education and Training Command

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Occupational Survey Report AFSC 2E1X2

Meteorological And Navigation Systems

20031126 071

Christine G. Garcia
Oct 02

U.S. AIR FORCE

Integrity - Service - Excellence

Air Force Occupational Measurement SQ



AFOMS/OA

1550 Fifth Street East

Randolph AFB, TX 78150

DSN 487 - 6811

<https://www-r.omsq.af.mil/OMY/indexomy.htm>

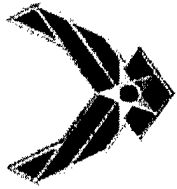
Integrity - Service - Excellence



Overview



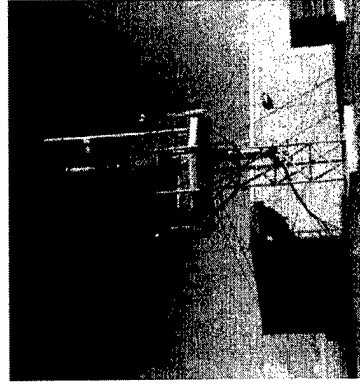
- Survey background
- Survey results
- Implications and way ahead



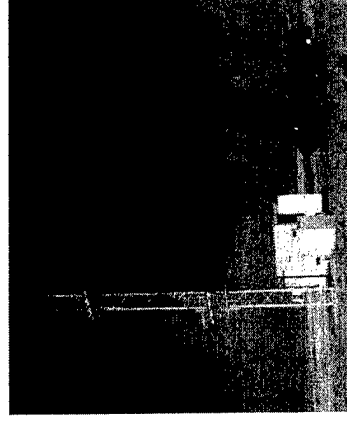
Work Performed by Members of AFSC 2E1X2



- Install, remove, relocate, modify, deploy and maintain fixed and mobile meteorological and navigation (METNAV) systems
- Perform flight inspection duties, analyze equipment performance trends

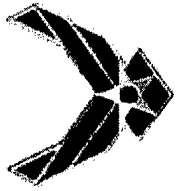


AN/FRN 45 Tactical Air Navigation (TACAN)



AN/GRN-29 Instrument Landing System (ILS)





Survey Background

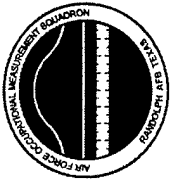


- Survey initiated to obtain data to:
 - Evaluate current classification and training documents
 - Support promotion test development
- Last Occupational Survey Report (OSR) - August 1999
- Current survey data collected-
February - July 2002
- Components Surveyed:
 - Active Duty: 3-, 5- and 7-Skill Levels
 - Guard: 5- and 7-Skill Levels





Current Training Program



- AFSC-awarding course
 - 338 TRS, Keesler AFB, MS
 - E3ABR2E132-002, METNAV Apprentice Course, 90 Days
 - 24 Semester hours for CCAF
 - Prerequisite - Electronic Principles Course

<u>Programmed TPR</u>	<u>Programmed Elimination Rate</u>
FY02: 91 students	FY02: 10%
FY03: 100 students	FY03: 10%



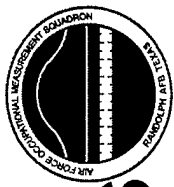
Survey Sample Characteristics



	<u>AD</u>	<u>ANG</u>	<u>Total</u>
Assigned*	527	72	599
Surveyed	425	51	476
Sample	253	27	280
Usable Returns	60%	53%	59%

- Average TICF for AD: 9 yrs 3 months
- Average TAFMS for AD: 10 yrs 3 months
- Percent of AD in first-enlistment: 26%

* Assigned as of July 02



Skill & Paygrade Characteristics



Skill-Level Distribution

	Assigned*	Sample
3-Level -	19%	13%
5-Level -	47%	55%
7-Level -	34%	32%

Paygrade Distribution

	Assigned*	Sample
E-1 - E-3 -	13%	9%
E-4 -	20%	24%
E-5 -	27%	29%
E-6 -	22%	23%
E-7 -	16%	15%
E-8 -	1%	0%

*Assigned as of July 02

Note: Columns may not add to 100% due to rounding

2E1X2



Command Representation



Command	Assigned %*	Sample %
---------	-------------	----------

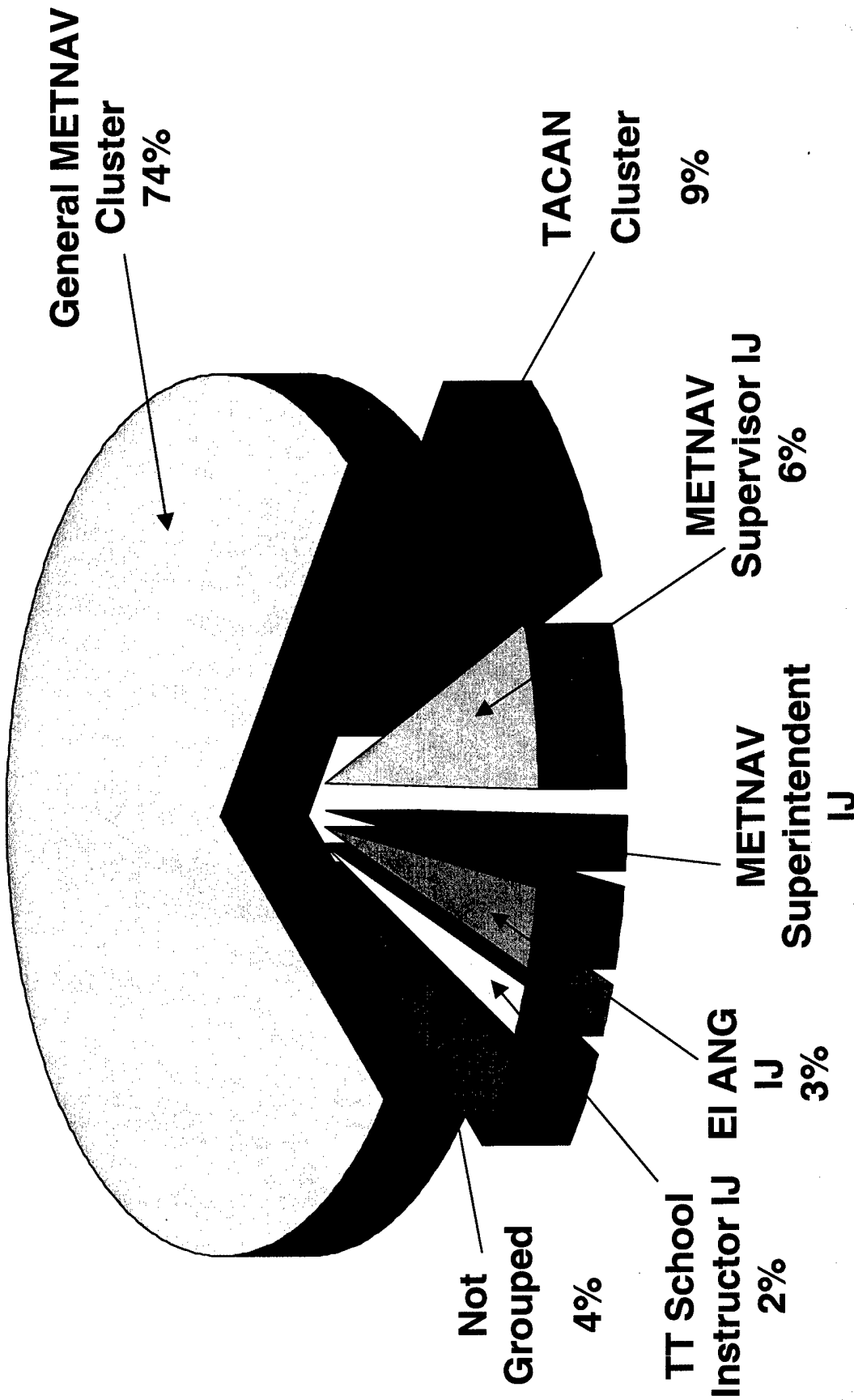
ACC	20	19
USAFE	14	12
AETC	13	15
AMC	11	11
PACAF	11	11
AFMC	9	9
AFSPC	3	4
AFSOC	3	3
AFFSA	2	3
AWS	2	3
ANG	12	10

* Assigned as of July 02



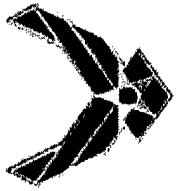
Job Structure

Sample size: 280



IJ = Independent Job

Sections do not add to 100% due to rounding



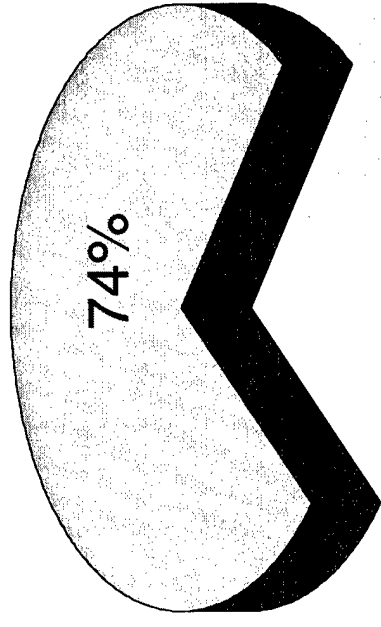
General METNAV Cluster

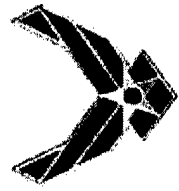
(N=206)



- Remove or replace bulbs
- Trace circuits or signals using block or circuit diagrams
- Analyze system block diagrams
- Remove or replace dummy load
- Inspect, measure, or align GRN-30 localizer system units or major subassemblies

Entry-Level METNAV Job
General METNAV Job
Mobile METNAV NCOIC Job





Tactical Air Navigation Cluster

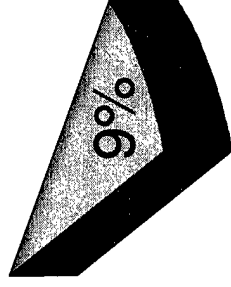
(N=24)

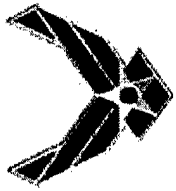


- Inventory equipment, tools, parts, or supplies
- Maintain tool kits
- Perform corrosion control procedures
- Pack or unpack tactical equipment
- Perform pallet buildups
- Adjust antenna orientations to known reference

Special Tactics Job

Combat Communication Job



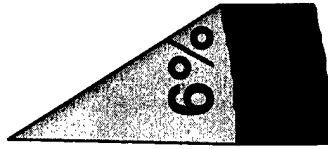


Independent Jobs



• METNAV Supervisor IJ (N=34)

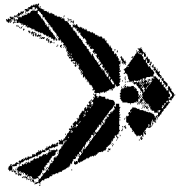
- Evaluate personnel for compliance with performance standards
- Write replies to inspection reports
- Interpret policies, directives, or procedures for subordinates
- Counsel subordinates concerning personal matters



• METNAV Superintendent IJ (N=7)

- Initiate requests for TDY orders
- Monitor equipment certification programs
- Write staff studies, surveys, or routine reports,
other than training or inspection reports





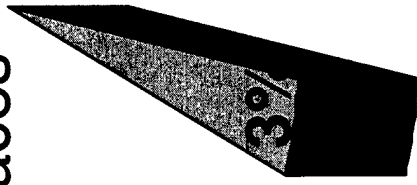
Independent Jobs

(Continued)



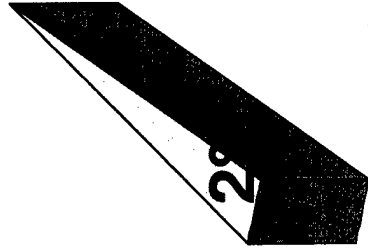
• Engineering and Installation (EI) (ANG) IJ (N=7)

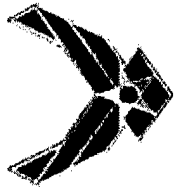
- Assemble conduits
- Assemble minor hardware, such as clamps, brackets or braces
- Install or remove FMQ-13 wind measuring sets
- Install or remove lightning protection
- Install or remove fixed TACAN systems



• Technical Training School Instructor IJ (N=6)

- Develop training programs, plans, or procedures
- Develop or procure training materials or aids
- Administer or score tests
- Develop written tests
- Conduct formal course classroom training





Career Ladder Progression



- 3- and 5-skill-level personnel
 - Work in the most technical jobs in the career field
 - Spend most of their time on technical tasks
- 7-skill-level personnel
 - Continue to perform technical tasks
 - However, take on supervisory, training, and administrative duties



Percent Across Specialty

Jobs DAFSC



DAFSC DAFSC DAFSC
2E132 2E152 2E172
(N=36) (N=153) (N=91)

83	80	59
----	----	----

General METNAV Cluster

TACAN Cluster

14 7 9

METNAV Supervisor IJ

0 3 15

EI (ANG) IJ

0 3 2

METNAV Superintendent IJ

0 1 7

Technical Training School Instructor IJ

0 3 2

Not Grouped

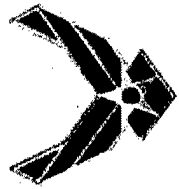
3 3 6



Career Ladder Progression Percent Time Spent on Duties



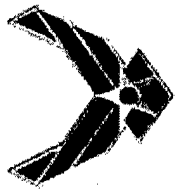
	DAFSC 2E132 (N=36)	DAFSC 2E152 (N=153)	DAFSC 2E172 (N=91)
Performing General Maintenance Activities	36	29	20
Maintaining Nonelectronic Meteorological Instruments and Solid-State Barometers	5	4	1
Maintaining Wind, Temperature, Visibility, Thunderstorm Sensing, and Cloud Sets	10	7	3
Maintaining NEXRAD PUPs	1	1	1
Maintaining Wind, Temperature, and Cloud Tactical Weather Equipment	3	2	1
Maintaining Solar Optical and Radio Observing Equipment	0	*	*
Installing or Removing METNAV Systems	4	3	3
Maintaining LFB Systems	*	*	*
Maintaining AN/GRN-29 SSILSs	9	8	5



Career Ladder Progression Percent Time Spent on Duties (cont'd)



	DAFSC 2E132 (N=36)	DAFSC 2E152 (N=153)	DAFSC 2E172 (N=91)
Maintaining VHF Omnirange (VOR) Systems	1	2	1
Maintaining AN/TRN-2626B and AN/TRN-41			
TACAN Systems and OE-537/URN			
Modulation Generators	4	1	1
Maintaining AN/FRN-45/46 TACAN Systems	7	6	4
Performing Flight Inspections	1	2	3
Performing Mobility Activities	3	1	1
Performing Management and Supervisory Activities	4	13	30
Performing Training Activities	2	6	8
Performing General Administrative and TO System Activities	3	6	10
Performing General Supply and Equipment Activities	8	9	7

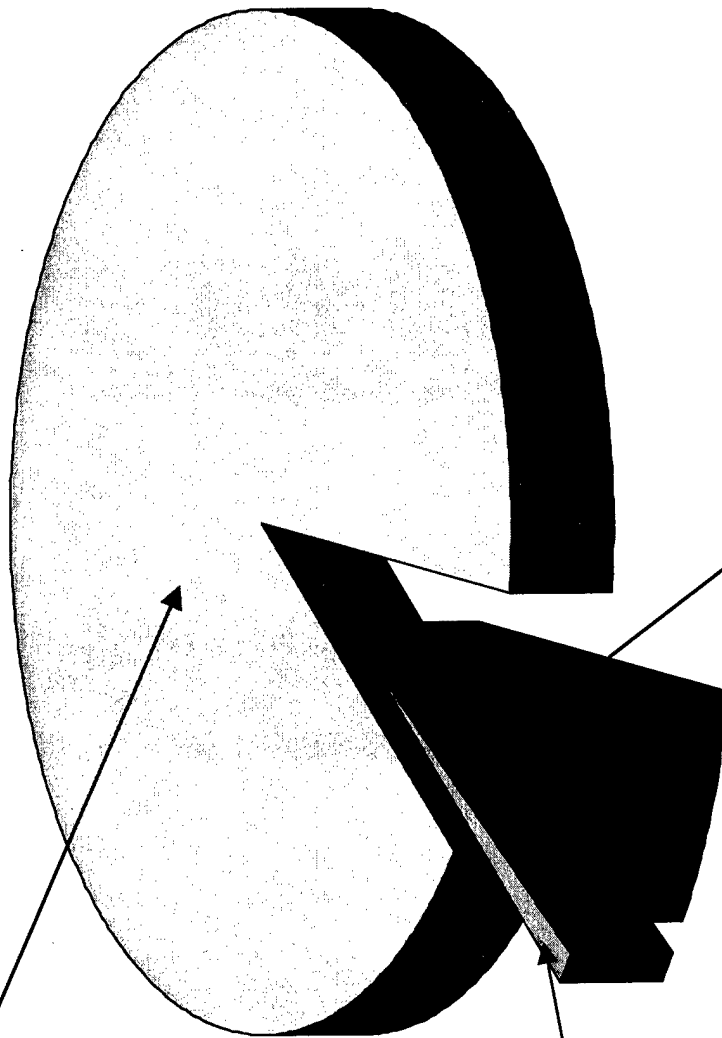


First-Enlistment Job Structure



Sample size: 67

**General METNAV Cluster
91%**



**Not Grouped
1%**

**TACAN Cluster
8%**



First-Enlistment Personnel Representative Tasks



Percent
Members
Performing
(N=67)

Tasks

Remove or replace bulbs

Perform corrosion control procedures

Measure power outputs

Perform GMQ-34 cloud height set inspection and
maintenance procedures

Perform FMQ-13 operational checks

Perform FMQ-13 operational checks wind measuring
set inspection and maintenance procedures

Perform FMQ-8 temperature-dew point measuring set
inspection and maintenance procedures

Trace circuits or signal using block or circuit diagrams

Perform FMQ-8 operational checks

Analyze system circuit operations

Inspect, measure, or align GRN-31 glideslope system
units or major subassemblies

88



First-Enlistment Personnel Equipment



Percent
Members
Performing
(N=67)

Equipment

Test Equipment

Digital Multimeters

Oscilloscopes

Electronic Frequency Counters

Attenuators

Dummy Loads

Spectrum Analyzers

Directional Couplers

Weather/Navigation Equipment

AN/GMQ 34 Cloud Height Measuring Sets

AN/FMQ 13 Wind Measuring Sets

ML 17 Rain Gauges

AN/FMQ 8 Temperature Dew Point Measuring Sets

AN/GRN 29 ILS with Glideslope

ML 658/Gm Digital Altimeter Barometers

AN/FRN 45 Tactical Air Navigations

AN/GMQ 32 Transmissometer Sets

100

100

97

96

96

96

87

88

87

85

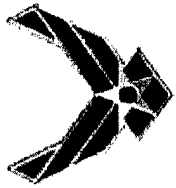
84

81

78

76

75



Training Documentation Analysis



- 2E132 Course Training Standard (CTS) was not matched to OSR data
 - CTS Electronic Principles/CTS Task List
 - CTS Task List not proficiency coded
- 2E152 and 2E172 Course Training Guides (CTGs) are well supported by OSR data
 - Twenty percent members performing used as a guide to CTG inclusion
 - CTG's line items are not proficiency coded
 - Tasks listed in Tasks Not Referenced (Training Extract) should be reviewed for possible inclusion in CTGs



Tasks not Referenced to CTGs



Examples

Tasks	Percent Members Performing					Tsk	
	3-	5-	7-	Tng		Dif	
	<u>LVL</u>	<u>LVL</u>	<u>LVL</u>	<u>Emp</u>	<u>ATI</u>		
A0052 Measure power outputs	94	78	63	6.15	4.94	18	
A0008 Analyze indications of BITs	67	77	66	5.26	4.50	18	
A0026 Compute voltage values	58	38	36	4.26	4.30	18	
J0251 Align FRN 44 antenna components	14	30	23	4.37	7.06	11	
C0110 Determine dewpoints using ML 429 psychrometric calculators	50	49	37	4.04	4.44	18	

Mean TE Rating is 2.25 Standard Deviation is 1.60 (HIGH TE= 3.85)
Mean TD Rating is 5.00, Standard Deviation is 1.00 (HIGH TD= 6.00)



Plan of Instruction (POI) Analysis



- POI is well-supported by survey data
- Tasks not referenced to any POI learning objective should be reviewed for possible inclusion in POI



Tasks not Referenced to POI

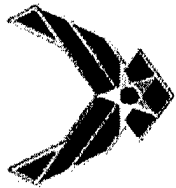


Examples

Percent
Members
Performing

<u>Tasks</u>	<u>1st</u>	<u>1st</u>	<u>Tng</u>	<u>Tsk</u>
	<u>Job</u>	<u>Enl</u>	<u>Emp</u>	<u>Dif</u>
A0010 Analyze system block diagrams	88	87	7.04	5.31
I0238 Perform GRN 31 glideslope				
flight check ground procedures	63	72	6.63	6.03
I0235 Perform GRN 30 localizer				
flight check ground procedures	56	72	6.48	6.22
A0067 Record radiation pattern ground				
check readings	63	73	6.37	4.35
				18

Mean TE Rating is 2.25, Standard Deviation is 1.60 (HIGH TE= 3.85)
Mean TD Rating is 5.00, Standard Deviation is 1.00 (HIGH TD= 6.00)



First-Enlistment Deployments



Number of deployments completed by
1-48 TAFMS personnel in support of contingencies or exercises
during the past 12 months

1-48 MOS
(N=67)

DEPLOYMENTS

None	79%
1	13%
2	0%
3	4%
4	0%
5	1%
6 or more	1%



Number of Days First-Enlistment Personnel Spent TDY



Deployment days spent by AD first-enlistment

personnel on TDY in support of contingencies or exercises
during the past 12 months

1-48 MOS
(N=67)

DEPLOYMENTS

30 days or less

9%

31-59 days

4%

60-89 days

3%

90-119 days

4%

120-149 days

0%

150-179 days

0%

180 days or more

0%

None

79%

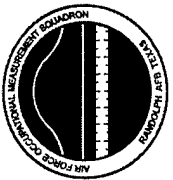
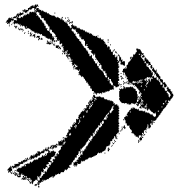


METNAV Courses Completed

By AD 2E1X2 Personnel



	1-48 MOS (N=67)	49-96 MOS (N=51)	97+ MOS (N=135)
<u>COURSES COMPLETED</u>			
METNAV System Apprentice	93%	98%	59%
VOR and TACAN Maintenance	61%	59%	41%
Principles, Transmitters, and			
Monitors	57%	49%	32%
AN/GMQ 34 Cloud Height			
Measuring Sets	63%	57%	36%
AN/FMQ 13 Wind Measuring			
Sets	63%	57%	31%
AN/FMQ 8 Temp Dew Point			
Measuring Sets	63%	57%	36%
TACAN and TACAN Monitors	64%	55%	40%
NEXRAD PUP Maintenance	12%	14%	21%
None	6%	2%	13%
Other	10%	20%	24%



Job Satisfaction Indicators (AFSC 2E1X2 vs. Comparative Sample)



	1-48 Months		49-96 Months		97+ Months	
	2002 2E1X2 (N=67)	Comp Sample* (N=377)	2002 2E1X2 (N=51)	Comp Sample* (N=133)	2002 2E1X2 (N=135)	Comp Sample* (N=427)
Job interesting	85	81	83	84	94	86
Talents well utilized	79	74	79	79	86	82
Training well utilized	84	77	91	73	85	75
Sense of accomplishment	76	71	79	74	83	80
Plan to reenlist	52	34	73	53	61	55

*Comparative sample of 2EXXX AFSCs surveyed in the last 12 months includes AFSC 2E1X1 - Satellite, Wideband, and Telemetry Systems

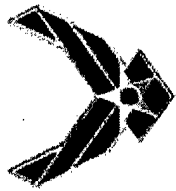


Job Satisfaction Indicators (AD)

(Current vs. Previous Study)



	1-48 Months TAFMS 2002 (N=67)	49-96 Months TAFMS 2002 (N=51)	97+ Months TAFMS 2002 (N=135)
Job interesting	85	83	94
Talents well utilized	79	79	86
Training well utilized	84	91	85
Sense of accomplishment	76	79	83
Plan to reenlist	52	73	61



Job Satisfaction Indicators (AD) (Across Specialty Jobs)



	General METNAV Cluster (N=198)	TACAN Cluster (N=14)	METNAV Supervisor IJ (N=18)	METNAV Supt IJ (N=7)	TT School Instructor IJ (N=6)
Job interesting	91	71	89	86	83
Talents well utilized	83	71	78	100	100
Training well utilized	89	43	83	86	83
Sense of accomplishment	83	36	78	86	83
Plan to reenlist	63	64	50	43	67

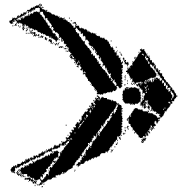


Retention Dimensions First-Enlistment Airmen (N=67)



	Percent Responding	Average
Planning to Reenlist (N=35)		
Medical or dental care for AD member	67	2.68
Retirement benefits	65	2.76
Bonus or special Pay	65	2.47
Pay and allowances	65	2.36
Military related education and training opportunities	65	2.19
Planning to Separate (N=31)		
Pay and allowances	61	2.63
Recognition of efforts	61	2.16
Location of present assignment	58	2.50
Military lifestyle	55	2.41
Civilian job opportunities	48	2.67

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence



Retention Dimensions

Second-Enlistment Airmen (N=51)



	Percent Responding	Average
Planning to Reenlist (N=37)		
Medical or dental care for family members	65	2.46
Job security	63	2.69
Bonus or special pay	63	2.24
Off-duty education or training opportunities	54	2.60
Pay and allowances	54	2.40
Planning to Separate (N=14)		
Pay and allowances	64	2.33
Civilian job opportunities	50	2.57
Military lifestyle	50	2.29
Leadership at unit level	43	2.50
Bonus or special pay	43	1.83

Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence



Retention Dimensions Career Airmen (N=135)



	Percent Responding	Average
Planning to Reenlist (N=82)		
Retirement benefits	77	2.73
Medical or dental care for family members	49	2.60
Pay and allowances	49	2.38
Off-duty education or training opportunities	49	2.33
Military lifestyle	49	2.28
Planning to Separate (N=9)		
Additional duties	91	2.00
Civilian job opportunities	67	2.17
Enlisted evaluation system	56	2.60
Military lifestyle	56	2.40
Bonus or special pay	54	2.45

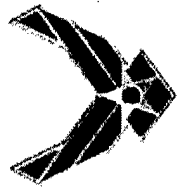
Scale: 1 = slight influence, 2 = moderate influence, 3 = strong influence



Summary of Results



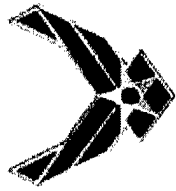
- Career ladder progression typical
 - Highly technical at 3-skill level progressing to more managerial at 7-skill level
- Career ladder documents well supported by OSR data
 - CTGs and POI well supported by OSR data
 - Review of Tasks Not Referenced listing warranted for possible inclusion in CTGs or POI
- Job satisfaction indicators
 - Job satisfaction is good
 - Slightly lower than the previous study
 - Reenlistment intentions higher in the current study than the previous study



Way Ahead



- Utilization and Training Workshop (U&TW) is scheduled for 8 Oct 02 at Keesler AFB
- OSR results will be briefed at the U&TW
- SKT Team briefed with new data 18 Aug 02



Questions?



Visit our web site at:

<https://www-r.omsq.af.mil/OMY/indexomy.htm>

E-Mail: christine.garcia@randolph.af.mil